GV 487
.D72
Copy 1

LIBRARY OF CONGRESS.

Chap. GV487 Copyright No.

Shelf .D72

UNITED STATES OF AMERICA.

EXERCISES

SCIENTIFICALLY PRESCRIBED FOR USE OF

DUMB-BELLS

BY

D. L. DOWD

PROFESSOR OF PHYSICAL AND VOCAL CULTURE

NO. 16 EAST FOURTEENTH ST., AND 713 FIFTH AVE., NEW YORK

AUTHOR OF

PHYSICAL CULTURE FOR HOME AND SCHOOL, SCIENTIFIC AND PRACTICAL
322 PAGES, 80 ILLUSTRATIONS

FACIAL AND NECK DEVELOPMENT, AND HINTS FOR THE COMPLEXION
FULLY ILLUSTRATED

SCIENTIFIC AND PRACTICAL PHYSICAL MEASUREMENTS FOR SELF-INSTRUCTION
MUSCULAR DEVELOPMENT, ETC.

15
0530

MAY 17 1888
52 52

NEW YORK

PRIVATE EDITION—PRINTED FOR THE AUTHOR

1888

Copyright, 1888
By D. L. DOWD

All rights reserved

TROW'S
PRINTING AND BOOKBINDING COMPANY,
NEW YORK.

DUMB-BELL EXERCISES.

A GREAT deal of benefit, physically, can be derived from the use of dumb-bells, but in order to gain it you must understand how to use them in an intelligent and scientific manner. Many people have resorted to the use of dumb-bells to better their physical condition; they have bought a pair of bells of a weight ranging from ten to a hundred pounds, and set to work with them without any special direction as to how they should be used to the best advantage. Indeed, I think the great majority of those that have indulged in the use of them have done themselves more harm than good, more especially those who have used heavy weights, and the rest have become tired because they did not know how to use them, thus losing their interest in the work. The performer should have understood that there is a special exercise for every set

of muscles in the body, and just how to apply it.

In the following pages you will find special exercises for some of the prominent muscles of the body, arms, and legs. Many of them can be developed by the intelligent use of dumb-bells. But we cannot hope by their means to develop the chest and lungs so well as with an apparatus like the "exerciser," which is described on page 38. With such an apparatus you do not need dumb-bells nor any other apparatus; for, by following the instructions for its use, you can develop all parts of the body to perfection.

One great drawback to the use of dumb-bells is the monotony of the work; but if you will, you can do yourself considerable good by their use.

In using bells remember the following hints:

First: You must practise at least five times a week, but if you can practise once every twenty-four hours so much the better; the whole exercise will not last over forty-five minutes.

Second: You must work every muscle un-

til you have tired it, and make it ache a little. From this light exercise the muscles will recover their strength very quickly. Always stand erect, with the head up and the chest projected.

For business people about 4 P.M. is generally thought the best time to exercise, for it is this time that the general depression from business is most keenly felt; hence the reason for livening up before the evening meal by a little exercise. If you cannot take this hour, then almost any time of day or evening will do.

Third: When performing with the dumb-bells, be sure not to swing the arms, I mean that swing that is given to them by a motion of the body, but raise and lower them by the power of the muscles, and not the swing.

Fourth: Make all the movements fairly quick and even; do not make any jerky movements. Bear in mind that you must not tire the muscles to the fullest extent until you have practised for about two weeks.

Fifth: From five to eight pounds for each bell should be used. The strongest should not use more than eight pounds. Ladies

should use from three to five pounds according to the strength.

Sixth: You must practise the exercises in the order in which they are here given, as they have been arranged to the best advantage.

DUMB-BELL EXERCISE NO. 1.—LATERAL PORTION OF THE DELTOID MUSCLE, ON THE SIDE OF THE SHOULDER. (SEE I IN FIG. NO. 56.)

Take a bell in each hand, with the palms turned toward the outside of the thigh, and maintaining the body erect, the feet together, the hips drawn back, the chest projected, the shoulders drawn back, the head erect, and the chin drawn in (see Fig. No. 14). Now, with the arms straight and stiff, raise them up both together (only one raised in figure) straight out and up from the sides of the body, and as high as you can (see Fig. No. 56). Repeat this movement until you tire the shoulder-muscles. Inhale strongly and deeply as the arms are ascending, and exhale forcibly as the arms are descending.

Take breath this way ten or a dozen times, and then fill the lungs comfortably full and hold the breath in while you make three or four movements, or as many as you can con-

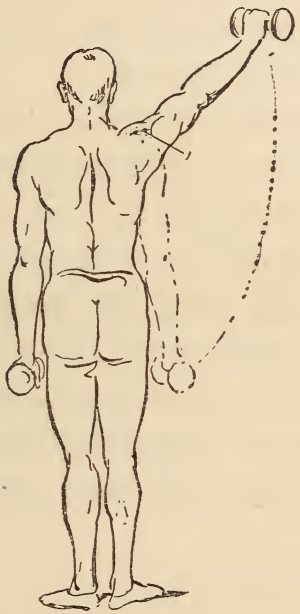


FIG. NO. 56.—Lateral Deltoid. (See 1.)

veniently; then let it out, and repeat it until you feel that you have tired the lungs slightly. (The tendon of this portion of the deltoid muscle, at its lower insertion, is connected with anterior and posterior portions of the

deltoid, and is attached to the humerus (bone of the upper arm) a few inches below the shoulder-joint, and at its upper insertion is attached to the scapula (bone of the shoulder); and when in contraction it moves the arm outward and upward from the side of the body, as shown in Fig. No. 56.

(There are three portions of the deltoid muscle, and we have a separate exercise for each; of course, performing any one of these three movements would, to some extent, bring into contraction the other two portions, for they all three aid each other in their special work; but we can bring them to a more symmetrical development by exercising each part separately, than is possible with one exercise for the three.)

DUMB-BELL-EXERCISE NO. 2.—LATISSIMUS DORSI, MUSCLE COVERING THE SIDE OF THE BACK. (SEE I IN FIG. NO. 57.)

With a bell in each hand, stand with the body erect, the feet together, hips drawn back, the chest projected, the shoulders drawn

back, the head erect, and the chin drawn in (see Fig. No. 14). Now, keeping the body as stiff as is possible, press the left arm downward as hard as you can, by drooping the

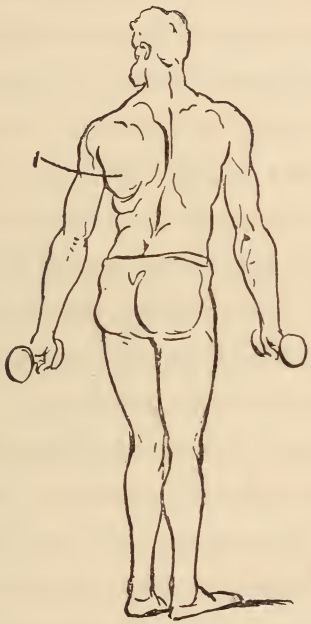


FIG. No. 57.—Latissimus Dorsi. (See 1.)

shoulder, just as though you were pushing against some object on the floor that reached to your hand (see Fig. No. 57), then allow the arm and shoulder to assume their natural position again, and perform the same with the

right arm; use the right and left alternately in this exercise until you tire the muscle named. (You may not at first get much satisfaction from this exercise, unless you happen to get it just right; but satisfaction will soon come, if you will persevere in the effort.

(The latissimus dorsi is a large, broad, flat muscle covering a portion of the side of the back (see 1 in Fig. No. 57). At its upper insertion it is attached to the humerus (bone of the upper arm), and along the side of the back to the lower ribs; at its lower insertion it is attached to the crest of the ileum (back portion of the hip-bone). When the latissimus dorsi is in contraction it moves the arm from an upward position downward and backward; also when the arm is hanging at the side it depresses the shoulder by forcing the arm downward and outward, as is represented in Fig. No. 57.)

DUMB-BELL EXERCISE NO. 3.—ANTERIOR PORTION OF THE DELTOID MUSCLE ON THE FRONT OF THE SHOULDER. (SEE I IN FIG. NO. 58.)

Take a bell in each hand, with the palms turned to the front; stand with the body erect, feet together, hips drawn back, chest projected, shoulders drawn back, head erect, and chin drawn in (see Fig. No. 14). Now, with the arms straight and stiff, raise them up both together, straight out and up in front of the body as high as you can (see Fig. No. 58). Repeat this movement until you tire that portion of the deltoid mentioned. Inhale strongly and deeply as the arms are ascending, and exhale strongly as the arms are descending. Take the breath in this way ten or a dozen times, and then fill the lungs comfortably full, and hold the breath in while you make three or four movements, or as many as you can conveniently. Then let it out, and repeat the same until you feel that you have tired the lungs slightly.

The tendon of this portion of the deltoid

muscle, at its lower insertion, is connected with the lateral and posterior portions of the deltoid, and is attached to the humerus (bone of the upper arm) a few inches below the

FIG. NO. 58.—Anterior Deltoid. (See 1.)

shoulder-joint, and at its upper insertion is attached to the clavicle (collar-bone); and when in contraction it moves the arm outward and straight upward from the front of the body, as is represented in Fig. No. 58.

DUMB-BELL EXERCISE NO. 4.—MUSCLES OF THE FOREARM. (SEE 1 AND 2 IN FIG. NO. 59.)

Take a bell in each hand, with the palms turned toward the outside of the thigh, with the body erect, feet together, hips drawn back, chest projected, shoulders drawn back, head erect, chin drawn in; now contract the inner portion of the forearm muscles, by bending the hand at the wrist inward and upward (see Fig. No. 59), then bend the hand at the wrist backward and upward. Repeat this movement with the hands at the same time; first turn them inward as strongly as you can, and then turn them backward as strongly as possible until you make the muscles of the forearm ache.

There are about eighteen different muscles in the forearm, most of which are brought into contraction by this movement of the hand. Some of the forearm muscles, at their upper insertions, are attached to the humerus (bone of the upper arm), but the greater number of them are attached to the ulna and radius (the

two bones of the forearm) near the elbow-joint. At their lower insertions the tendons of some of them are attached to the bones of the hand and the wrist, and others to the

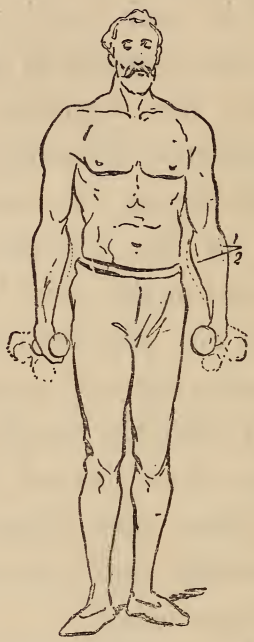


FIG. No. 59.—Forearm Muscles. (See 1 and 2.)

bones of the fingers, and when in contraction they move the hand, bending at the wrist at all the various angles. They also open and shut the fingers, which is a splendid exercise for strengthening the grip of the hand and developing the muscles of the forearm.

DUMB-BELL EXERCISE NO. 5.—MUSCLES ON THE SIDES OF THE ABDOMEN, OBLIQUUS ABDOMINIS. (SEE I IN FIG. NO. 60.)

Take a ball in each hand, arms hanging down at the sides. Stand erect, feet together, hips drawn back, chest projected, shoulders drawn back, head erect, chin drawn in. Now bend the body sideways, and a little forward; bending only at the hips sideways as far as possible, then rise, and bend over the other side in the same manner (see Fig. No. 60).

Take the breath in as the body is going from the right side to the left, and exhale as it is going to the right. Do so a few times, and then reverse the action of taking in the breath; after breathing this way a few times, take in quite a full breath, and hold it while you make as many movements as you can conveniently without feeling any strain. Then exhale, and repeat the exercise until you have tired the muscles. Should the lungs get tired before the muscles do, then stop the special breathing and continue the movement.

The obliquus abdominis muscles cover the sides of the abdomen. They are attached to the eight lower ribs from above, and their

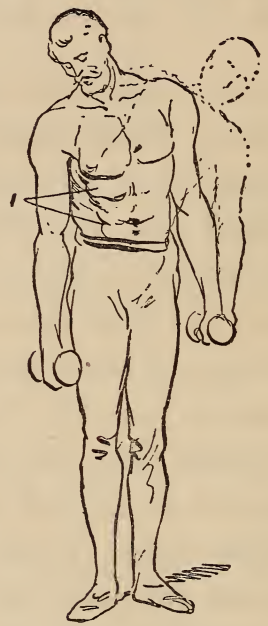


FIG. No. 60.—Obliquus Abdominis. (See 1.)

lower attachment is to the crest of the ileum (forward and upper part of pelvic or hip-bone); and when in contraction they move the body from side to side, bending at the hips, and also act as balancing muscles for the trunk.

DUMB-BELL EXERCISE NO. 6.—MUSCLES ON THE FRONT OF THE UPPER ARM, BICEPS. (SEE 1 IN FIG. NO. 61.)

With a bell in each hand, arms hanging down straight and palms turned to the front,

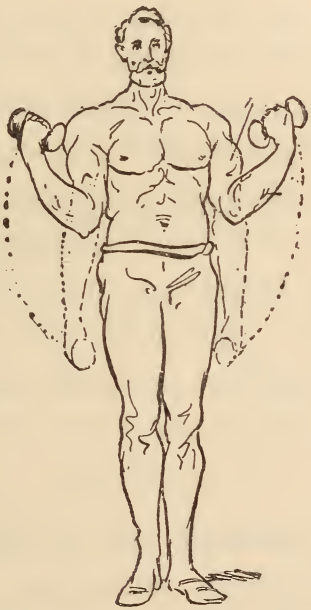


FIG. NO. 61.—Biceps. (See 1.)

stand with the body erect, feet together, hips drawn back, chest projected, shoulders drawn back, head erect, and chin drawn in. Now,

keeping the elbows firmly at the sides, raise the bells to the shoulders by bending the arms at the elbows (see Fig. No. 61). Lower the bells to the sides again, and repeat the movement until you make the muscles ache; be sure and give them the full contraction, by allowing the arms to straighten fully, and then to move upward to the highest point possible each time. The biceps muscles, at their upper insertions, are attached to that part of the scapula (bone of the shoulder, or shoulder-blade) which forms the upper portion of the shoulder-joint, and at their lower insertion are attached to the radius (small bone of the forearm) about an inch and a half below the elbow-joint in front, and when in contraction move the forearm as the arm bends at the elbow-joint.

DUMB-BELL EXERCISE NO. 7.—LOINS OF THE BACK, ERECTOR SPINÆ (SEE I IN FIG. NO. 62) AND HAM-STRING MUSCLES.

With a bell in each hand, body erect, feet together, hips drawn back, chest projected, shoulders drawn back, head erect, and chin

drawn in. Now, keeping the knees stiff, incline forward and downward (bending only at the hips), letting the bells come as near the floor as possible. Then, with the arms rigid

FIG. No. 62.—Erector Spinæ. (See 1.)

and straightened out at full length in front of you, raise the body upward and bend a little backward (see Fig. No. 62). The arms should be held rigidly extended in front of the body all the time you are performing this

movement; inhale deeply as the body moves forward and downward, and exhale forcibly as the body is moving upward and backward.

This movement is very excellent for strengthening a weak back. These erector spinæ muscles are attached along the vertebræ, also to the ribs and the back point of the pelvis (hip-bone); when in contraction they hold the spine erect, and also move it from a forward bent to a backward bent position, as is represented in Fig. No. 62.

DUMB-BELL EXERCISE NO. 8.—MUSCLES ON THE BACK OF THE UPPER ARM, LATERAL AND POSTERIOR PORTIONS OF THE TRICEPS MUSCLES. (SEE 1 AND 2 IN FIG. NO. 63.)

With a bell in each hand, raise the hands to the shoulders by bending the arms at the elbows. Stand with the feet together, body erect, hips drawn back, chest projected forward, shoulders drawn back, head erect, chin drawn in. Now elevate the bell in right hand straight above the head, extending the arm at

full length (see Fig. No. 63); then draw the right arm back to the shoulder again, and while doing so extend the bell in left hand, straight above the head, thus exercising the

FIG. No. 63.—Triceps Muscles. (See 1 and 2.)

left and right arm alternately. Continue this exercise until you have tired the muscles named. This movement brings into contraction both the lateral and posterior portion of the triceps at the same time, and also brings

into contraction the deltoid muscles, to some extent.

The tendons of the triceps muscles, at their lower insertions, are attached to the ulna, large bone of the forearm that forms the elbow-joint, a little below it, and at their origin or upper insertions are attached to the humerus (bone of the upper arm); when in contraction they straighten the arm at the elbow-joint.

DUMB-BELL EXERCISE NO. 9.—MUSCLES OF THE BREAST, PECTORALIS MAJOR. (SEE I IN FIG. NO. 64.)

Bell in each hand, body erect, feet together, hips drawn back, chest projected, shoulders drawn back, head erect, and chin drawn in.

Now, keeping the arms very rigid, move them across the body in front as far as you can, meanwhile keeping the elbows stiff and straight; see that the arms are kept close to the body, and allow them to cross each other (see Fig. No. 64); then move them back to place, and repeat the movement until you have

tired the muscles named (the faithful practice of this exercise will bring about a very rapid and beneficial development).

Inhale the breath as the muscles are relax-

FIG. No. 64.—Pectoralis Major. (See 1.)

ing and the arms are moving from the front of the body to the sides, and exhale strongly as the arms are moving from the sides forward and across the body.

(The pectoralis major is a broad, thick, tri-

angular muscle situated at the upper and fore part of the chest; it rises from the anterior surface of the clavicle (collar-bone) from half the breadth of the anterior surface of the sternum (breast-bone) as low down as the sixth or seventh rib. The fibres of this muscle all terminate in a flat tendon about two inches broad, which is inserted into the anterior edge of the humerus (bone of the upper arm); when in contraction this muscle moves the arm across the front of the chest, if the elbow is kept stiff.)

DUMB-BELL EXERCISE NO. 10.—MIDDLE PORTION OF THE TRAPEZIUS MUSCLES OF THE BACK. (SEE I IN FIG. NO. 65.)

Bell in each hand, the arms straight at the sides of the body, body erect, feet together, hips drawn back, chest projected, shoulders drawn back, head erect, and chin drawn in (see Fig. No. 14). Now for the movement. Make an effort to raise the shoulders upward (keeping the arms perfectly straight; see Fig. 65) as high as you can, making a movement

called shrugging of the shoulders. Repeat this movement rapidly until you have tired the muscles named, which will not take many

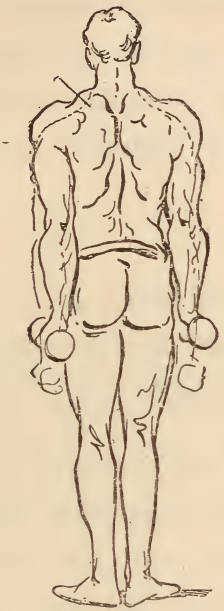


FIG. No. 65.—Middle Trapezius. (See 1.)

seconds if you contract the muscles fully each time.

The attachments of this portion of the trapezius muscles are to the upper part of the spine, and also to the clavicle (collar-bone) at the point attached to the upper part of the shoulder; when in contraction they pull the

shoulders upward, and slightly approaching the sides of the neck.

It is very essential that this portion of the trapezius should be exercised, if you wish to have the upper portion of the shoulder and lower portion of the neck strong and plump, for the two are blended together at this point.

DUMB-BELL EXERCISE NO. 11.—POSTERIOR PORTION OF THE TRICEPS MUSCLES. (SEE 1 IN FIG. NO. 66.)

Bell in hand, body erect, feet together, hips drawn back, chest projected, shoulders drawn back, head erect, and chin drawn in. Hold the arms straight at the sides, with the palms turned to the front; now raise the arms (both together) backward as high as possible, and at the same time twist them *outward* as much as possible. This twisting is the most important part of this movement, so you must be sure and get it right. Twist the arms outward and backward as hard as you can, so that the backs of the hands will approach

each other (see Fig. No. 66). Inhale deeply as the arms are moving backward, and exhale strongly as the arms are coming forward again; repeat until you tire the mus-

FIG. No. 66.—Posterior Triceps. (See ...)

cles. (The tendons of this portion of the triceps muscle, at its lower insertion, are attached to the ulna (bone of the forearm) at the elbow-joint, and at their upper insertion to the scapula (shoulder-blade), unlike the lat-

eral portion, which is attached to the humerus (bone of upper arm) near the shoulder-joint. This posterior portion is attached to the scapula, and when in contraction gives to the arm that peculiar rotary motion which you must strive to get in this exercise, if you would improve the development of this portion of the arm.)

DUMB-BELL EXERCISE NO. 12.—POSTERIOR PORTION OF THE DELTOID MUSCLES ON THE BACK OF THE SHOULDER. (SEE 1 IN FIG. NO. 67.)

Bell in each hand, body erect, feet together, hips drawn back, chest projected, shoulders drawn back, head erect, and chin drawn in.

Turn the palm of the hand in toward the outside of the thigh, pitch the body a little forward, bending at the hips (so that your arm may rise higher); now move the right arm straight backward and upward, as high as you can without twisting the arm in any way (see Fig. No. 67); then lower to its

place and do the same with the left arm, and make the movement with the right and left arm alternately, until you tire the muscle. (The tendons of this portion of the deltoid

FIG. NO. 67.—Posterior Deltoid. (See 1.)

muscles, at their upper insertions, are attached to the back and upper part of the scapula (bone of the shoulder), and at their lower insertion to the humerus (bone of upper arm) a few inches below the shoulder-joint; and

when in contraction it moves the arm straight backward and upward.)

DUMB-BELL EXERCISE NO. 13.—MUSCLES ON FRONT OF THE THIGHS, QUADRICEPS EXTENSOR. (SEE 1 IN FIG. NO. 68.)

Bell in each hand, body erect, feet together,

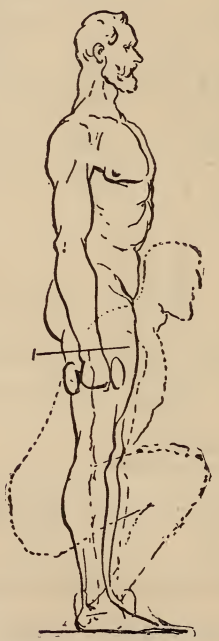


FIG. NO. 68.—Quadriceps Extensor. (See 1.)

hips drawn back, chest projected, shoulders drawn back, head erect, and chin drawn in;

now drop the body as near the floor as you can, bending at the hips and knees (see Fig. No. 68); then rise and repeat the movement, until you tire the muscles of the thighs.

Inhale as the body is lowering, and exhale strongly as the body is rising. This movement is what one could correctly term squatting.

There are four heads or origins to the quadriceps extensor; some of their tendons are attached to the femur (bone of the upper leg) near the hip-joint, and others to the pelvis (bone of the hips). At its lower insertion this quadriceps muscle converges into one large tendon, and is attached to the tibia (shin-bone) just below the knee-joint; it is also attached to the patella (knee-cap), and when in contraction it straightens the knees.

DUMB-BELL EXERCISE NO. 14—MUSCLES OF THE CALF, GASTROCNEMIUS AND SOLEUS. (SEE I IN FIG. NO. 69.)

Bell in each hand, body erect, feet together, hips drawn back, chest projected, shoulders

drawn back, head erect, and chin drawn in. Hold this position and rise as high as possible on your toes (see Fig. No. 69). Repeat this movement until you have tired the mus-

FIG. No. 69.—Gastrocnemius and Soleus. (See 1.)

cles. Bear in mind that you must rise as high as possible each time, if you would gain the best results. The tendons of the calf-muscles, at their upper insertions, are attached to the femur (bone of the upper leg), and at their

lower insertions they converge to and form the tendon Achillis.

This tendon is attached to the os calcis (bone of the heel), and when in contraction they raise the heels from the floor, thus precipitating the whole body forward and upward on the ball of the foot, or the toes. When you are walking, if you will take pains to rise well on the toes at each step, you will aid very materially in developing these muscles.

DUMB-BELL EXERCISE NO. 15.—MUSCLES ON THE BACK OF THE THIGHS, BICEPS. (SEE 1 IN FIG. NO. 70.)

No bells this time, if you are tired of holding them; if not, hold them to steady yourself with.

Body erect, hips drawn back, chest projected, shoulders drawn back, head erect, and chin drawn in (see Fig. No. 14). Now raise the left leg upward from behind (bending at the knee) as high as you can; but do not let the left knee swing forward from the right, but hold it firmly against it (see Fig. No. 70).

Lower to place again, and repeat the movement until you tire the muscle; then change to the right leg and tire that one. Be sure and rise as high as possible each time, and

FIG. No. 70.—Biceps of Leg. (See 1.)

lower full length. (The tendons of the biceps muscle, at its origin or upper insertion, are attached to the lower and back part of the pelvis (bone of the hips), and at its lower insertion are attached to the fibula (bone of

the back of the lower leg); and when in contraction the biceps flexes the lower leg on the back of the thigh.)

DUMB-BELL EXERCISE NO. 16.—MUSCLES ON FRONT OF LOWER LEG, TIBIALIS ANTICUS. (SEE I IN FIG. NO. 71.)

No bells. Sit in a chair or on a bench, and stretch your legs nearly at full length in front

FIG. NO. 71.—Tibialis Anticus. (See 1.)

of you, with the heels pressed firmly on the floor; now move the toes toward the body as hard as you can, bending the foot at the ankle.

joint (see Fig. No. 71); then press them back again firmly, both feet together, and give the muscles the full contraction each time. Repeat the movement until you have tired the muscles mentioned. (The tibialis anticus, at its origin, is attached to the tibia (bone of the front of lower leg) near the knee-joint at the outside, and the tendon, at its lower insertion, is attached to the cuneiform and metatarsal (bones forming the first joint of the great toe); and when in contraction it flexes the foot on the lower leg in front. This is a muscle much used in rowing, if one is using a sliding seat; it also raises the toes in walking, so that we will not drag them along the ground.)

DUMB-BELL EXERCISE NO. 17.—MUSCLES ON FRONT OF THE ABDOMEN, RECTUS ABDOMINIS. (SEE I IN FIG. NO. 72.)

Lie out at full length on a sofa, a bench, or on the floor; place your arms at the side or across your breast, as you choose; now raise the body from the prone to a sitting position (see Fig. No. 72); then lower it again. Re-

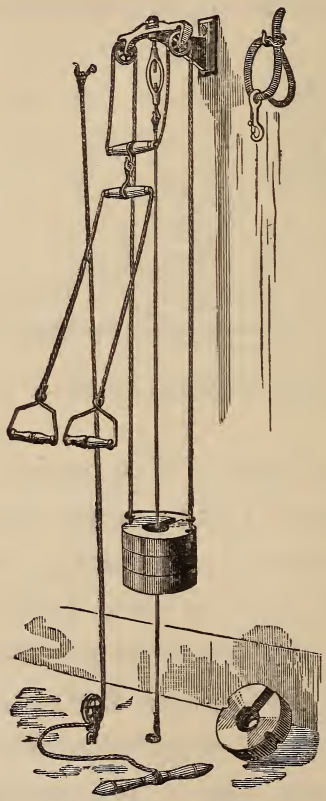
peat this movement until you feel that you have tired the muscles of the abdomen.

If this should prove to be too severe an exercise for you, then only lower the body part way down, until you gain more strength. If your legs seem to rise when you attempt to raise the body, then put some weight on them

FIG. NO. 72.—Rectus Abdominis. (See 1.)

to keep them down. The tendons of the rectus abdominis, at their upper insertions, are attached to the lower point of the sternum (breast-bone), and at their lower insertions are attached to the central portion of the pelvis (bone of the hips) in front; and when in contraction they move the body forward, bending at the hips. The strengthening of these muscles is one of the greatest safe-

On the following pages are shown some of the results derived from the faithful practice of the system of exercises set forth in the volume entitled, *Physical Culture for Home and School, Scientific and Practical*, as performed with the "Home Exerciser."



HOME EXERCISER.
(Patented.)

APPENDIX A.

A few instances showing the results of training under the author's system as applied to the "Home Exerciser" are now given. The first column gives the measurement of pupils when admitted; the second shows the increase after practice for the time stated.

Rockwood Hoar, son of Senator Hoar, of Worcester, Mass., aged twenty-nine; the following changes in five months and two days' practice, from November 28, 1882, to May 1, 1883.

Weight, 158 pounds	165 pounds.
Height, 5 feet 8½ inches	5 feet 9 inches.
Chest circumference, 38 inches	39½ inches.
Neck, 14 inches	14½ "
Forearm, 10¾ inches	11 "
Biceps straight, 11¾ inches	12¾ "
Biceps flexed, 13⅓ inches	14⅓ "
Shoulder, 18¾ inches	19 "
Waist, 29⅜ inches	30 "
Thigh, 20½ inches	21 "
Calf, 14½ inches	15 "
Chest expansion, 4¾ inches	6 "

APPENDIX B.

W. W. Hobbs, aged eighteen, of Worcester, Mass.; two months' practice.

Weight, 146 pounds	158 pounds.
Neck circumference, 13¾ inches	14½ inches.

Chest, 35 inches.....38 inches.
Forearm, 9¾ inches.....11 "
Biceps straight, 10⅛ inches.....11½ "
Biceps flexed, 11 inches.....12½ "
Shoulder, 16¾ inches.....19 "
Waist, 28 inches.....29¾ "
Thigh, 19½ inches.....21 "
Calf, 13¾ inches.....14¾ "
Chest expansion, 3¾ inches.....5½ "

APPENDIX C.

John Nelson, aged seventeen, son of Judge Nelson, Worcester, Mass.; five months' practice, from November 27, 1882, to May 27, 1883.

Height, 5 feet 7⅞ inches.....5 feet 8 inches.
Weight, 127 pounds.....143 pounds.
Neck circumference, 14½ inches....14¾ inches.
Chest, 34¾ inches.....36½ "
Forearm, 9⅝ inches.....10½ "
Biceps straight, 10 inches.....10¾ "
Biceps flexed, 11⅛ inches.....12¾ "
Shoulder, 16½ inches.....17⅝ "
Waist, 27¾ inches.....29 "
Thigh, 18¾ inches.....20½ "
Calf, 13¼ inches.....14½ "
Chest expansion, 2¾ inches.....4¾ "

APPENDIX D.

W. C. White, aged sixteen, son of Dr. White, of Springfield; three years' practice, from October 15, 1879, to October 1, 1882.

Weight, 134 pounds	178	pounds.
Height, 5 feet 6 inches	5 feet 10	inches.
Neck circumference, 13 inches	14½	inches.
Chest, 34 inches	40	"
Forearm, 10½ inches	11¾	"
Biceps straight, 10¾ inches	12½	"
Biceps flexed, 12½ inches	14½	"
Shoulder, 17 inches	19	"
Waist, 30 inches	31	"
Thigh, 21 inches	23	"
Calf, 13 inches	15	"
Chest expansion, 2½ inches	5½	"

APPENDIX E.

E. Wilder, aged forty, Springfield, Mass.; six months' practice in warm weather, from July 6, 1882, to January 1, 1883.

Weight, 148 pounds	165	pounds.
Height, 5 feet 7½ inches	5 feet 7½	inches.
Neck circumference, 14 inches	15¼	inches.
Chest, 36 inches	38	"
Forearm, 11 inches	11½	"
Biceps straight, 11½ inches	12	"
Biceps flexed, 13 inches	14	"
Shoulder, 18 inches	18¾	"
Waist, 31 inches	31	"

Thigh, 20 inches.....21 inches.
Calf, 14½ inches.....15¼ "
Chest expansion, 3 inches.....5½ "

APPENDIX F.

James M. Thompson, aged nine, son of Colonel James M. Thompson, of Springfield, Mass.; six months' practice, from March to June, 1883, and from November 14, 1883, to February, 1884.

Weight, 78 pounds.....85 pounds.
Height, 4 feet 6½ inches.....4 feet 8⅜ inches.
Neck circumference, 11 inches.....11½ inches.
Chest 26½ inches.....28 "
Forearm, 7¾ inches.....8¼ "
Biceps straight, 8 inches.....8½ "
Biceps flexed, 8½ inches.....9¼ "
Shoulder, 12 inches.....13¼ "
Waist, 23½ inches.....24½ "
Thigh, 15¾ inches.....17 "
Calf, 11⅛ inches.....11½ "
Chest expansion, 2¼ inches.....3 "

APPENDIX G.

S. W. Bowles, aged seventeen, son of Dr. S. W. Bowles, of Springfield, Mass.; fifteen months' exercise, from January 1, 1882, to April 1, 1883.

Weight, 127 pounds.....157 pounds.
Height, 5 feet 8¼ inches.....5 feet 10 inches.
Neck circumference, 13 inches.....14¼ inches.
Chest, 31 inches.....37 "
Forearm, 9½ inches.....11 "

Biceps straight, 9½ inches.....12 inches.
Biceps flexed, 11 inches.....14 "
Shoulder, 16 inches.....18½ "
Waist, 25½ inches.....29 "
Thigh, 18½ inches.....19½ "
Calf, 12½ inches.....13⅜ "
Chest expansion, 2 inches.....6 "

APPENDIX H.

G. D. Pratt, aged seventeen; one year's work.

Weight, 129 pounds.....139 pounds.
Height, 5 feet 6½ inches.....5 feet 6⅝ inches.
Neck circumference, 13 inches.....13¾ inches.
Chest, 31¾ inches.....36½ "
Forearm, 10 inches.....10½ "
Biceps straight, 10 inches.....11½ "
Biceps flexed, 11½ inches.....13¼ "
Shoulder, 16¼ inches.....17 "
Waist, 27 inches.....28½ "
Thigh, 19 inches.....20¼ "
Calf, 13 inches.....14 "
Chest expansion, 3 inches.....6 "

APPENDIX I.

J. Bowles, aged fourteen, son of Dr. S. W. Bowles, of Springfield, Mass.; seven months' practice, from December 16, 1882, to March, 1883, and from March 1 to June 1, 1884.

Height, 5 feet ¾ inch.....5 feet 4 inches.
Neck circumference, 11 inches.....12½ inches.

Chest, 28 inches	32 inches.
Forearm, $8\frac{3}{4}$ inches	$9\frac{1}{2}$ "
Biceps straight, $8\frac{1}{4}$ inches	$9\frac{1}{4}$ "
Biceps flexed, $8\frac{1}{2}$ inches	$10\frac{1}{2}$ "
Shoulder, $13\frac{1}{8}$ inches	15 "
Waist, 23 inches	25 "
Thigh, $17\frac{1}{2}$ inches	$18\frac{1}{4}$ "
Calf, $11\frac{3}{4}$ inches	$12\frac{1}{2}$ "
Chest expansion, $2\frac{1}{4}$ inches	4 "

APPENDIX J.

D. L. Dowd, the author, aged twenty-three ; results of a little over four years' practice, commencing at an age when men are supposed to have attained full development physically, from October 1, 1877, to May 1, 1882.

Weight, 138 pounds	163 pounds.
Height, 5 feet 7 inches	5 feet 8 inches.
Neck circumference, 14 inches	17 inches.
Chest, 36 inches	42 "
Forearm, 10 inches	$12\frac{1}{2}$ "
Biceps straight, $11\frac{1}{2}$ inches	$13\frac{1}{2}$ "
Biceps flexed, 13 inches	$15\frac{1}{2}$ "
Shoulder, 18 inches	$19\frac{1}{2}$ "
Waist, 29 inches	31 "
Thigh, 20 inches	22 "
Calf, 14 inches	$15\frac{1}{4}$ "
Chest expansion, $4\frac{1}{2}$ inches	11 "

The contrast between a photograph of Mr. Dowd's form taken before he commenced systematic work and one taken three years later is most striking.

The one shows a thin, flat-chested, almost consumptive-looking man ; the other a model of manly strength. Said photographs are to be seen at the Home School for Physical Culture, 16 East Fourteenth Street.

It will be observed that these pupils ranged all the way from nine to forty years, when commencing practice.

Such results need no comment. They show that the human body is not like the iron casting, rigid and fixed like a mould, but rather like the sculptor's clay, that may be moulded into forms of beauty and strength, or—"more's the pity"—may be deformed and spoiled.

NOTICES OF THE PRESS.

From The New York Clipper, 1883.

PROF. D. L. DOWD was born at Nelson Flats, a small town in the Empire State, twenty-nine years ago, stands 5 feet 8 inches in height without shoes, and weighs, stripped, 152 pounds. He is a man of remarkable muscular development and immense physical strength. He has always been strictly temperate, never having partaken of either malt or spirituous liquors, and having eschewed tea and coffee during the past dozen years. In the fall of '83 he posed as a model at the Art Students' League and the Academy of Design, New York, and also at the Art Guild, Brooklyn. He was pronounced the finest developed model they had ever seen. Dowd's greatest recorded hand lift is 1,442¼ pounds of iron. He informs us that he has never lifted all he can, and has never failed to lift all he ever tried; that he can hold out at arm's length a ninety-five pound dumb-bell; can crowd up slowly with one arm straight above his head a 175-pound dumb-bell; can draw himself up fairly and squarely with arm extended at full length, with one little finger till his chin will pass above his hand; can do a great many very difficult muscle feats; can also do some fair performances which require quickness and suppleness of movement. This is the result of five years' practice of his method of light exercise. Unlike many athletes noted for great muscular strength, Dowd seldom puts his physical powers to a test with heavy work. Previously to making his last and best lift he had not tried his powers in the same way for about eighteen months. He practices light work regularly with the classes in his prosperous gymnasium at Springfield, Mass., developing with such exercise, and always being able to perform heavy feats when he makes the attempt.

From The New York Times, 1884.

Wallack's was crowded, as usual, at the performance last night, but Lulu failed in almost every experiment she attempted. D. L. Dowd, the athlete who defeated all her attempts last Friday night, foiled even the umbrella trick last night.

Mr. Dowd has been for the past several years a teacher of physical culture in Springfield and Worcester, Mass., and has made a thorough study of the phenomena of physical force. In conversation with a Times reporter yesterday regarding Miss Hurst's feats, he said: "The performance of the girl depends for its success far more upon the rapidity of her movements, and the strategy which she uses, than on the actual force which she exerts, and it is for this reason that her power appears to the spectator magnetic, instead of muscular. The truth is, it is muscular force applied strategically. When I went to see her, I believed from what I had read and heard that the girl really possessed some wonderful and mysterious power, but I had not been on the stage with her ten minutes before I discovered that she used a little muscle and a good deal of strategy, and, being thoroughly acquainted with the effect of the two elements combined, I was fully prepared to defeat Miss Hurst's object when it came my turn to be operated upon. I took the cane in my hand, and she placed the palm of her hand against it, with her arm nearly at full length. You must know that when the arm is in this position it is capable of exerting more force in the pushing movement than when it is bent.

"The first pressure of the girl came from the triceps muscle of the arms, which straightened them at full length. This is a very slight movement, and hardly perceptible to the spectators, but it is a strong one, and was intended to push me backward, as so many before me had been pushed. I anticipated it, however, and braced forward, so that she failed to move me. Then came the strategy of which she makes such good use in all her performances. The moment she felt me brace toward her, she reversed her pushing

movement, and bringing her biceps muscle into play, tried to pull me toward her in the direction in which I was bracing, her object being to take advantage of my own power to use it against myself, and exerting very little of her own force. As I knew what was coming, however, I reversed my movement at the same time, bracing backward, and she tried for five minutes to move me without success. She was equally unsuccessful in all her tests with me simply because I was as quick as she was in reversing the direction of the force I was exerting, and was strong enough to resist her pushing and pulling. The only secret of her performance is that she is quick enough to use your own power against yourself unless you understand the workings of the different muscles brought into play. Lulu Hurst is a very strong girl, but I think I could pick out a thousand such girls in this city."

From The Worcester Gazette, 1883.

We, the undersigned, having tried D. L. DOWD'S System of Physical Culture, at 33 Pearl Street, do recommend it to any and all ladies and gentlemen as a beneficial and healthful exercise. Mr. Dowd is a thorougly competent and careful teacher, and we take pleasure in recommending him and his system to the public.

OTIS GOODMAN, M.D., DR. J. F. ADAMS, DR. G. F. HARWOOD, DR. A. F. TOWNSEND, DR. CHAS. L. NICHOLS, FREDERICK KIMBALL, ROCKWOOD HOAR, CHAS. F. ALDRICH, W. A. PICKETT, S. E. GREENE.

THE HOME EXERCISER

IS THE DESIDERATUM FOR PHYSICAL CULTURE AT HOME.

REASONS.

1. It takes up but six inches square of floor room :
2. It is an ornament.
3. It is noiseless.
4. It cannot get out of order.
5. Can be adapted instantly to the use of any one over four years of age.
6. No other apparatus is necessary.
7. The work on the "Exerciser" is the most fascinating form of exercise ever devised.
8. Especially adapted to bring about the cure of biliousness, dyspepsia, constipation, and, above all else, weak lungs, or even the first stages of consumption.

There are thirty-four different movements given for the "Exerciser," thus giving variety enough to prevent fatigue and monotony, and at the same time bringing all the muscles and parts of body into play. This gives a symmetrical development of the body, which is not the case with the work on the rowing machine and similar apparatuses.

There are special movements, too, devised for overcoming certain deformities, such as round shoulders, flat chests, etc., and any one, unless too much deformed, can, by means of the "Exerciser," develop a good figure and carriage.

The principal advantage the "Exerciser" possesses over the ordinary apparatus used to develop the body at home, is that exercise on this machine is interesting and not fatiguing.

While the "Exerciser" can be used by the athlete to bring about the greatest possible development of the body, it is equally adapted for the weak, and can be used by any one over ten years of age, however feeble the muscular development. Business and professional men, students, ladies and children, can receive very great benefit from the use of the "Exerciser," for it is specially adapted to strengthen those parts of the body that are inclined to be feeble in people leading sedentary lives, namely, the lungs and organs of digestion and nutrition.

If every business man, bookkeeper, editor, minister, or any one engaged at desk work, would spend an occasional moment during working hours with the overhead-pulley at the breathing exercises, healthy blood would be sent to the brain and the liver, and honest, cheerful work would be the result.

While the "Exerciser" is so complete and comprehensive as to be a complete gymnasium in itself, it is a marvel for neatness and convenience. The whole machine takes up about six inches square of floor room, can be put on the casing behind the door, or on the window-casing in bed-room or office; it is not unsightly, and can be put up or taken down quickly. Two screws in the floor and one in the casing, are all the fastenings required. A little putty and paint remove all traces when taken down. The weight used can be varied from three to twenty pounds or more.

The machine is practically noiseless and may be used without disturbing others in the house, or even in the same room.

We have received testimonials from all classes of people as to the benefit and pleasure they have found from the use of these machines.

A physician writes :—"I have long been interested in physical culture, and I believe I have tried nearly all the methods that could be carried on at home, not having time to attend a gymnasium.

"I found as hundreds of others have, that these methods were fatiguing to me, and that the work soon became distasteful (it was 'too much like work'). Your 'Home Exerciser,' however, has been a revelation to me, for it solves the problem how professional men and women, and those that *must* lead sedentary lives, can still maintain robust health. I can truthfully say that I would not be without the use of the 'Exerciser' for three months for five times the cost of the machine.

"Its use has not grown distasteful since the novelty has worn off; on the contrary, I look forward with pleasure to the half-hour before retiring when I can use the 'Exerciser,' and I grasp its handles in the morning before dressing with as much pleasure as I would the hand of an old friend. I must tell you that I have made rapid changes in my appearance since using the 'Exerciser;' the greatest change has been in the development of the chest, the front and upper portions of which have enlarged wonderfully.

"My wife uses the machine as faithfully and with as much pleasure as I do. My pastor is using it and is enthusiastic over it; and quite a number of my patients have become infected with the mania for good health and robust bodies."

W. E. FOREST, B.S., M.D.,

(Now in Decatur, Ill.) 29 WASHINGTON SQUARE, N. Y.

To any one who cannot have the advantage of personal instruction this system will be invaluable.

The work on the "Exerciser," not only strengthens the muscular

system, but has a wonderful beneficial effect in strengthening the internal organs, lungs, stomach, liver, etc., and this increases the vital powers. There are certain movements that will invariably cure constipation and biliousness, and others that will strengthen weak lungs, etc.

If the "Exerciser" be attached to the window-casing it can be covered from sight by the curtain when not in use. The change from one attachment to another is almost instantaneous. There are over 30 different movements given for the "Exerciser." The weight used can be varied according to the strength of the user from $3\frac{1}{2}$ lbs. to 15 or more.

We manufacture four grades of the Home Exerciser: No. 1 and No. 2 Nickel, No. 1 and No. 2 Galvanized. Prices (with book of instructions, entitled "Physical Culture for Home and School, Scientific and Practical, 322 12mo pages, 80 illustrations, by Prof. D. L. Dowd), **$8, $10, $12, $16.**

No. 1, Iron work is all nickel plated and highly polished, cord couplings nickel plated, wood work solid Rosewood polished, the finest (drab colored) braided sash cord, a nickel polished plate to cover screw in floor and bracket at top, price $16.00.

No. 2, Nickel plated and highly polished, all but cord couplings japanned, maple or oak wood work shellaced, finest braided sash cord, price $12.00. Either of these would be considered an ornament in any room. No. 1, Galvanized, is made as good in every respect—the only difference is the iron work is galvanized instead of nickeled, price $10.00. The No. 2, Galvanized, is made up plainly, but just as durable as the others (the only difference is in the appearance of them), the system of exercise remains exactly the same, price $8.00.

☞ Exerciser packed for shipping weighs twenty-one pounds.

☞ Cost of Expressage to Chicago, 95 cents; to Kansas City, $1.40; to San Francisco, $3.75.

☞ We deliver goods in New York City WITHOUT CHARGE.

☞ Send money by Check, P. O. Order, Registered Letter, or Express Money Order, payable to Professor D. L. Dowd, 16 East 14th Street, New York.

☞ No goods sent C. O. D. (except to our Agents) unless purchaser will forward with order amount to cover express charge to and from destination which will be deducted from C. O. D. bill when purchase is made.

New York, Oct., 1885.

Dear Sir:—The Exerciser is without any doubt the best thing on the market, and I can place a great many of them.

DIO LEWIS, M.D.

Send for Illustrated Circular and Testimonials.

PHYSICAL CULTURE

For Home and School, Scientific and Practical.

BY

D. L. DOWD,

PROFESSOR OF PHYSICAL AND VOCAL CULTURE,

16 EAST FOURTEENTH ST., AND 713 FIFTH AVE., NEW YORK.

CONTENTS.

CHAPTER I.

Physical Culture, Scientific and Practical, for the Home and School.

CHAPTER II.

Pure Air and Foul Air.

CHAPTER III.

Questions Constantly Being Asked:

Question No. 1.—Does massage treatment strengthen muscular tissue?

Question No. 2.—Are boat racing and horse-back riding good exercises?

Question No. 3.—Are athletic sports conducive to health?

Question No. 4.—Why do you object to developing with heavy weights?

Question No. 5.—How long a time will it take to reach the limit of development?

Question No. 6.—Is there a limit to muscular development, and is it possible to gain an abnormal development?

Question No. 7.—What is meant by being muscle bound?

Question No. 8.—Why are some small men stronger than others of nearly double their size?

Question No. 9.—Why is a person taller and weigh less in the morning than in the evening?

Question No. 10.—How should a person breathe while racing or walking up stairs or up hill?

Question 11.—Is there any advantage gained by weighting the shoes of sprinters and horses?

Question No. 12.—What kind of food is best for us to eat?

Question No. 13.—What form of bathing is best?

Question No. 14.—How can I best reduce my weight, or how increase it?

Question No. 15.—Can you determine the size of one's lungs by blowing in a spirometer?

CHAPTER IV.

Personal Experience of the Author in Physical Training.

CHAPTER V.

Physical Culture for the Voice.

CHAPTER VI.

Practice of Deep Breathing.

CHAPTER VII.

Facial and Neck Development.

CHAPTER VIII.

A Few Hints for the Complexion.

CHAPTER IX.

The Graceful and Ungraceful Figure, and Improvement of Deformities, such as Bow Leg, Knock-Knee, Wry Neck, Round Shoulders, Lateral Curvature of the Spine, etc.

CHAPTER X.

A Few Brief Rules. The Normal Man.

CHAPTER XI.

Specific Exercises for the Systematic Development of every Set of Muscles of the Body, Arms and Legs, also Exercises for Deepening and Broadening the Chest and Strengthening the Lungs.

[These 34 Specific Exercises are each illustrated by a full length figure (taken from life) showing the set of muscles in contraction, which can be developed by each of them.]

CHAPTER XII.

Dumb-Bell Exercises.

Ten Appendices showing the relative gain of pupils from 9 years of age to 40.

A copy of this work, pamphlet bound, is given with each Exerciser. Sold separate from Exerciser. Price, extra cloth bound, $1.50; price, pamphlet bound, $1.50, with privilege of $1.50 deducted on purchase of an Exerciser within 30 days after purchase.

The following illustrations were photgraphed from life while performing the exercises, thus each pair of muscles is shown in full contraction, making the exercises interesting as well as intelligent, giving one a thorough knowledge how to develop every set of muscles in the body, deepen and broaden the chest, and strengthen the lungs.

*** 322 12mo Pages. 80 Illustrations. Extra Cloth Bound. Price, $1.50.

Read the following unsolicited testimonials.

From the New York World : Sunday, April 3, 1887.

Prof. Davidson's Review, " A Sensible Book on Physical Culture."

Physical Culture for Home and School, Scientific and Practical. By Prof. D. L. Dowd, with eighty illustrations. (New York, printed for the author, No. 16 East Fourteenth Street, 8vo, pp. xxii., 300). This is one of the most sensible books we have met on the subject of physical culture. It is written with directness and simplicity, and the exercises it prescribes are such as can be performed by any one in his own house. It aims at symmetry of development, beauty, health, and longevity, not at gladiatorial perversion of muscle, which tends to brutality, ugliness, and destruction. Prof. Dowd's system extends to every part of the body, not excluding even the vocal organs and the muscles of the face. We doubt not that any person, not organically imperfect or diseased, who should follow the directions given in this book, would attain perfect health and never require the aid of a physician. One of the greatest needs in American education to-day is physical culture, and just the kind of physical culture that Prof. Dowd recommends, teaches, and exemplifies. A system like his ought to be introduced into every school, public and private, and taught in connection with elementary physiology. In this way young persons would not only be rendered healthy, but they would come to respect their bodies, and refrain from abusing them by diet, dissipation, or laziness. How much vice is due to the want of physical culture !

Send for Illustrated Circular and Testimonials.

FACIAL DEVELOPMENT

AND

HINTS FOR THE COMPLEXION.

FULLY ILLUSTRATED. Price, 50 Cents.

BY

D. L. DOWD,

PROFESSOR OF PHYSICAL AND VOCAL CULTURE,

NO. 16 EAST FOURTEENTH ST., AND 713 FIFTH AVE., NEW YORK.

D. L. DOWD'S

Scientific and Practical Physical Measurements

FOR SELF-INSTRUCTION.

Tables showing the relative measurements of a fully developed male or female of any height from five to six feet in height, giving first, height, then weight in proportion to height, circumference of neck, breadth of shoulders, depth of chest, circumference of chest, chest expansion, circumference of waist, circumference of fore arm, circumference of biceps natural, circumference of biceps flexed, circumference of hips, circumference of thigh, circumference of calf, etc.

The different measurements are given for each successive inch of height, with these carefully compiled tables is given a card for self measurement, a model figure with the points of measurements marked to show you just where to put the tape, and a card for recording the deficiencies of your own proportions as compared to that of the tables of the fully developed model given, so you can determine at a glance what parts are below the standard and need development most.

This information is of great value to those who are trying to improve themselves physically, while it is a satisfaction to nearly every intelligent person to know in just what degree he or she approaches perfection of BEAUTY in Physical Anatomy.

I will forward the above on receipt of price, $1.00.

Address,

School of Scientific, Physical and Vocal Culture,

16 East 14th Street, New York.

PROF. D. L. DOWD.

EXERCISES

SCIENTIFICALLY PRESCRIBED FOR USE OF

DUMB-BELLS

BY

D. L. DOWD

PROFESSOR OF PHYSICAL AND VOCAL CULTURE

NO. 16 EAST FOURTEENTH ST., AND 713 FIFTH AVE., NEW YORK

AUTHOR OF

PHYSICAL CULTURE FOR HOME AND SCHOOL, SCIENTIFIC AND PRACTICAL
324 PAGES, 80 ILLUSTRATIONS

FACIAL AND NECK DEVELOPMENT, AND HINTS FOR THE COMPLEXION
FULLY ILLUSTRATED

SCIENTIFIC AND PRACTICAL PHYSICAL MEASUREMENTS FOR SELF-INSTRUCTION
MUSCULAR DEVELOPMENT, ETC.

NEW YORK

PRIVATE EDITION—PRINTED FOR THE AUTHOR

1888

LIBRARY OF CONGRESS
00001971001

LIBRARY OF
0 000 197

LIBRARY OF CONGRESS
0 000 197 100 1